

**STATE****OF****TENNESSEE**

(Rev. 12-15-21)

January 1, 2021

**Supplemental Specifications – 400SS****of the****Standard Specifications for Road and Bridge Construction****January 1, 2021****Subsection 403.04** (pg. 286), 12-15-21; **Preparing Surface**; Revise Paragraph:

Prepare the designated surface as specified in **4054.05**. Ensure that the surface is dry when applying tack coat.

**Subsection 403.05.C** (pg. 286), 12-15-21; **Fog Sealing**; Revise 1<sup>st</sup> Paragraph:

When the Contract requires bituminous material for fog sealing of shoulders, provide emulsified asphalt meeting **403.02** or an item from QPL 40A. Apply diluted emulsified asphalt at a rate of 0.10 to 0.15 gallons per square yard based on a dilution rate of one part emulsified asphalt to one part water. This application may require two equal increments if run-off occurs. Apply fog seal when the ambient air temperature or the surface temperature is a minimum of 50°F.

**Subsection 407.09** (pg. 326-327), 12-15-21; **Weather Limitations**; Revise No. 2 & 3:

2. The bituminous plant mix is placed according to the temperature limitations specified in Table 407.09-1 and when weather conditions otherwise allow the pavement to be properly placed, compacted, and finished. Placement may proceed if either the air or surface temperature is met except for 411-TL, 411-TLD, 411-TLE, and 411-OGFC mixtures.

Measurement of the surface temperature shall be done on pavement that is shaded from direct sunlight unless no shaded location exists. If paving based on the air temperature, stop work once the air temperature falls below the minimum threshold. Do not start paving if the surface temperature does not meet the requirements and the air temperature is forecast to fall below the minimum temperature within 4 hours of starting work.

Table 407.09-1: Temperature Limitations

Compacted Thickness	Minimum Air or Surface Temperature (°F)	
	Unmodified mixes (PG 64, 67)	Modified mixes (PG 70, 76, 82)
≤ 1.5 inches	45	55
> 1.5 inches to < 3.0 inches	40	50
≥ 3.0 inches	35	45

3. For 411-TL, 411-TLD, 411-TLE, and 411-OGFC mixtures, placement shall proceed only when the pavement surface temperature and the air temperature are a minimum of 55° F and rising. Stop paving if the air temperature falls below 55°F immediately. Placement of these mixtures is restricted to the period between April 1 and October 31.

For all other mixtures, Do not place bituminous plant mix, with a compacted thickness of 1.5 inches or less, between November 30 and April 1. Do not place bituminous plant mix, with a compacted thickness greater than 1.5 inches, between December 15 and March 16. Only place 411-TL, 411-TLD, 411-TLE, and 411-OGFC mixtures when the pavement surface temperature and the ambient air temperature are a minimum of 55°F and rising; limit placement to the period from April 1 to November 1. If the temperature meets the above requirements, outside of normal paving season, a request for a seasonal limitation waiver may be submitted for Departmental consideration. Requests shall be submitted in writing at least one week before the anticipated need.

**Subsection 407.15.C** (pg. 336-337), 12-15-21; **Test Strips**; Revise 1<sup>st</sup> Paragraph:

Construct test strips for all ~~A, B, BM, BM-2, C, CW, D, and E~~ mixtures that require density testing to establish rolling patterns, to accommodate the Department to calibrate nuclear gauges, to verify that the base course or surface course mixture meets the density requirements of the specifications, and for mix design and production verification as required. ~~A test strip is not required for mixes AS, A-CRL, CS, TL, TLD, and TLE, but a~~ adjustments to the roller pattern may be made at the direction of the Engineer for mixtures that do not require density testing.

**Subsection 407.20.C.3** (pg. 346-347), 12-15-21; **Loss on Ignition (LOI)**; Revise 2<sup>nd</sup> & Remove 4<sup>th</sup> Paragraph:

If the percent of LOI in the aggregate differs by plus or minus 2% from the LOI indicated in the JMF, the Department will make a payment deduction in the price bid for the mix applied to the entire days production, not as a penalty but as liquidated damages. The percent of total payment to be deducted will be 5 times the percent that the LOI exceeds the JMF tolerance of plus or minus 2%.

~~To determine the deduction, the Department will use lots of approximately 5,000 square yards. The Department inspector will perform sampling and testing to establish the LOI according to the Department's sampling and testing procedures. If the initial tests indicate a variation in the LOI of plus or minus 2% than the value shown on the mix design, the Contractor shall perform the additional sampling necessary to establish the LOI of the aggregate in each lot, with the cost of the sampling being included in the contract unit prices bid for the paving items.~~

**Subsection 411.03.B** (pg. 353), 12-15-21; **Proportioning**; Revise Table 411.03-01:

**Table 411.03-1: Proportions of Total Mixture, Percent by Weight**

Surface Course	Effective Combined Mineral Aggregate	Asphalt Cement
Grading D	93.0 – 94.3	5.7 – 7.0 <sup>(1)</sup>
Grading E <sup>(2)</sup>	93.0 – 94.3	5.7 – 7.0 <sup>(1)</sup>
Grading E (shoulders)	93.5 – 94.0	6.0 – 6.5 <sup>(1)</sup>
Grading TL	92.5 – 94.3	5.7 – 7.5 <sup>(1)</sup>
Grading TLD	93.0 – 94.3	5.7 – 7.0 <sup>(1)</sup>
Grading TLE	93.0 – 94.3	5.7 – 7.0 <sup>(1)</sup>
<u>Grading TLE (shoulders)</u>	<u>93.5 – 94.0</u>	<u>6.0 – 6.5 <sup>(1)</sup></u>
Grading OGFC	92.0 – 94.0	6.0 – 8.0 <sup>(1)</sup>

<sup>(1)</sup> If the effective combined specific gravity of the aggregate exceeds 2.80, the above proportions may be adjusted as directed by the Engineer. The upper limit for flow values shall not apply to mixes with modified asphalt liquids.

<sup>(2)</sup> The minimum allowable asphalt cement content for 411E low volume mixtures is 5.3%.

**Subsection 411.03.C.1** (pg. 358), 12-15-21; **Recycled Asphalt Pavement**; Revise 2<sup>nd</sup> Paragraph:

All mixes shall contain at least 80% virgin asphalt, except for 411E Shoulder and 411TLE Shoulder Mixtures, which shall have at least 65% virgin asphalt.